

ABSTRACT OF THE DISCLOSURE

A microfluidic device and method for forming and dispensing minute volume segments of a material are described. In accordance with the present invention, a microfluidic device and method are provided for spatially confining the material in a focusing element. The device is also adapted for segmenting the confined material into minute volume segments, and dispensing a volume segment to a waste or collection channel. The device further includes means for driving the respective streams of sample and focusing fluids through respective channels into a chamber, such that the focusing fluid streams spatially confine the sample material. The device may also include additional means for driving a minute volume segment of the spatially confined sample material into a collection channel in fluid communication with the waste reservoir.